

Date: April 1, 1977

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING
1588 West North Temple
Salt Lake City, Utah 84116

C O N F I D E N T I A L

MINING AND RECLAMATION PLAN

1. Name of Applicant or Company Texasgulf Inc.
2. Proposed type of operation: Solution Mining of Potash
3. (a) Prior Land Use(s) Grazing, Oil & Gas Activities, Metalliferous Mineral Leases
(b) Current Land Use(s) Solution Mining, Solar Evaporation and Processing
(c) Possible or Potential Future Land Use(s) Winter Grazing, Gravel, Oil & Gas, Metalliferous Minerals
4. What vegetation exists on the mining site now? Sanddrop Seed, Cheatgrass, Saltgrass, Galleta, Sand Sage Brush, Rabbitbrush, Salt Brush, Horse Brush.
(a) Percent Cover 25%
5. What is the average pH of soil before mining? 8.4 pH
Name of person or agency and method of determining pH Soil Conservation Service
6. Site elevation above sea level 4,000
7. In case of coal, oil shale, and bituminous sandstone:
Principal seam (s) and thickness (es) _____
8. Estimated duration of mining operations 15 to 20 years
9. Has overburden and/or the oil shale or coal seams been classified as acid or alkali producing? ☐ yes ☒ no
Does the material being moved have any characteristics affecting revegetation? No
10. Will any underground workings be encountered? yes ☒ no ☐
Is there an active discharge from abandoned deep mines on the proposed area of operation? yes ☐ no ☒ If yes, describe the quality of water being discharged _____
11. Describe specifically a detailed procedure for: (Attachments, drawings, or supplements 8 1/2" x 11" sheets) SEE ATTACHED SCHEDULE
 - a. The mining sequence.
 - b. A procedure for constructing and maintaining access roads, to include a typical cross-section and a profile of the proposed road grades.
 - c. A procedure for site preparation to include removing and disposing of trees and brush.
 - d. A method for removing and stockpiling topsoil or disturbed materials.
 - e. A method for the placement of containment of all disturbed materials, to include the method for handling of all acid or alkali-producing and toxic material.
 - f. A procedure for final stabilization of disturbed material.

- ## TESTING

3. Describe seed bed preparation -

Outslope: Same as above

REVEGETATION

1. Revegetation to be completed by:

2. Mulch - Mixture of Siberian Wheatgrass,

3. Revegetation plan and schedule -

NOT APPLICABLE

[illegible]

4. Will affected area be subject to livestock or wildlife grazing: yes (X) no ()
If yes, describe vegetation protection The most feasible method available at
the time, such as fencing, propane bombs, patrols.
5. Will irrigation be used? yes () no (X) Type _____
6. Describe season maintenance of vegetation until security release is
granted The most effective method to insure plant growth.

I, the undersigned operator, hereby submit this to be my reclamation and mining plan for the area shown on the attached proposal map. I further understand that the operation will be conducted in accordance with the Mined Land Reclamation Act of 1975, and all rules and regulations currently in effect thereunder.

Signed R. L. Higgins, Operator Date 5-31-77
Manager, Cane Creek Potash Operations
Texasgulf Inc.

Taken, subscribed and sworn to before me the undersigned authority
in my said county, this 1st day of June, 1977.

Notary Public: Paul Arthur

My Commission Expires: Feb. 11, 1980

Attachment to Mining and Reclamation Plan
Texasgulf Inc.
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11.(a) The Mining Sequence:

Fresh water is pumped into the old existing mine through various injection wells and allowed to reach saturation. The saturated brine, containing potassium chloride and sodium chloride is removed from the mine and pumped to solar evaporation ponds where the solids are precipitated from the brine by evaporation.

The precipitated solids are harvested from the evaporation ponds and transported to the refinery by pipeline where the potassium chloride is separated from the sodium chloride by flotation.

After separation, the potassium chloride is dried and transferred by conveyor belt to two product storage warehouses where the potassium chloride is stored until sold.

The sodium chloride is transported by pipeline, from the flotation building to the tailings and waste disposal area.

See attached article from ENGINEERING AND MINING JOURNAL.

11.(b) A Procedure for Constructing and Maintaining Access Roads to Include a Typical Cross Section and a Profile of the Proposed Road Grades:

All roads from the plant site to the evaporation ponds are constructed of natural rock, soil and gravel (see Solution Mining Project Access Road and Pipeway Plan and Details, Drawing Nos. 742-C0, 9, 10, 11, 12, 13).

11.(c) A Procedure for Site Preparation to Include Removing and Disposing of Trees and Brush:

See Solution Mining Project, Drawing Nos. 742-CE-7, 8; 742-KD-1, 742-CE-16, 17, 18, 19, 20, 21, 22, 23, 34.

11.(d) A Method for Removing and Stockpiling Top Soil or Disturbed Materials:

All available top soil was used in constructing the solar evaporation ponds.

All available top soil was used in constructing a level plant and office area. (See General Plant Area Excavation, Drawing No. 21-X-02).

- 11.(e) A Method for the Placement of Containment of All Disturbed Materials to Include the Method for Handling All Acid or Alkali Producing and Toxic Material:

The entire plant and field area has been constructed in terraces to reduce erosion and best utilize the existing land area.

- 11.(f) A Procedure for Final Stabilization of Disturbed Material:

Field Area

1. Remove all harvestable product and process through milling system.
2. Remove all solar evaporation pond liners.
3. Buildings housing surface facilities will be dismantled and removed, or disposed of in an appropriate land fill.
4. Pumps and pipelines will be removed.
5. Debris, equipment, fencing and trash will be removed from the entire area.
6. After the entire area has been cleaned of debris, stabilization will be finalized by seeding with a specified plant mixture.

Access Roads

1. Buildings, pipelines and equipment will be removed.
2. Debris and trash will be removed and disposed of in appropriate land fill.
3. Except for roads the state may choose to keep open, the entrance to all access roads will be plowed up or blocked to eliminate traffic over the access roads.
4. The roadways and the immediate area along the roadways will be planted with a specified plant mixture.

Solution Mining Wells

1. All solution mining wells will be cemented to prevent migration of water between aquifers and overlying formations.

2. All pipelines and equipment will be removed from solution mining wells.
3. Debris and trash will be removed and disposed of in an appropriate land fill.

Plant Site

1. All buildings with the exception of concrete structures will be removed or buried in an appropriate land fill.
2. Concrete structures and foundations will remain in place with structures being sealed to eliminate entrance.
3. Pumps, pipelines, fencing and other equipment will be removed.
4. Debris and trash will be removed from the entire area and buried in a suitable land fill.
5. The entire plant area will be stabilized through planting with a specified plant mixture.

Tailings and Waste Disposal Area

1. The tailings dam will remain intact to prevent any migration of waste material from the disposal area into stream beds or aquifers (see Tailing Treatment and Disposal Drawing No. 24-X-01).
2. The waste material contained behind the tailings dam consists of sodium chloride in the solid state and as this material has commercial value such as the potential of being sold for road salt, stock salt or refined salt, no effort will be made to cover or reseed this area.
3. The canyon in which the waste material is contained is a box canyon and the only run-off of precipitation that is contained is the amount that falls in the canyon itself. The main watershed flows away from the tailings disposal area.